T. H. Paul and J.A. Millholland, Master Locomotive Builders of Western Maryland

Patrick H. Stakem

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Third edition

4th in Trains Series

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Introduction

This book describes two men whose careers intersected at the Mount Savage Locomotive Works in Western Maryland. T.H. Paul was Master Mechanic of the Works but left to form his own business based in Frostburg. He focused on narrow gauge locomotives. His break with the Cumberland & Pennsylvania Railroad, owner of the Mount Savage Shops, was amicable. He sent business to Mount Savage, and they sent him business concerning narrow gauge and mining equipment. Its was a win-win. When the Mount Savage Locomotive Works Catalog came out in 1883, Paul's engines were featured prominently.

James A. Millholland had come to Mount Savage with his father, also James Millholland, in 1866. He worked at the Mount Savage Locomotive Works and the Cumberland & Pennsylvania Railroad, then for the new Georges Creek & Cumberland Railroad.

Both Paul & Millholland were both Master Mechanics of the Cumberland & Pennsylvania Railroad. And, both men contributed to the state-of-the-art in 19th century railroads, and both had patents granted to them.

The author

Mr. Stakem is a member of the Council of the Alleghenies, the C&O Canal Association, the Western Maryland Railway Historical Society and is the Historian for the Western Maryland Chapter of the National Railway Historical Society. He has published several books about railroads in Allegany County, including “Cumberland & Pennsylvania Revisited” and “Railroading around Cumberland.” A native of Cumberland, he teaches for the Whiting School of the Johns Hopkins. University.

All photos from the author's collection, unless otherwise noted.

T. H. Paul

The Mount Savage Shops of the Cumberland & Pennsylvania (C&P) Railroad produced approximately one hundred locomotives between 1868 and 1917. At the same time, a smaller locomotive manufacturer flourished just up the line in Frostburg.

The Thomas H. Paul and Son Iron Works Company openned its facilities at the bottom of Depot Street, across from the C & P Depot in Frostburg in 1855, focusing on mine cars and machinery. Paul's residence was located nearby. The site was occupied by buildings of the Maryland Coal & Reality Company. The facility was purchased by Consolidation Coal in 1900, and by the Jenkins family in 1947.

The Paul works were located in 1855 where the Presbyterian Church now stands on Broadway. The move to Depot Street occurred in 1867. Production continued until 1883, when Paul left to build a locomotive facility in Baltimore. This effort was not successful, and he returned to Frostburg, although not to continue his work. He later moved to Sioux City, Iowa, in 1890. He had a foundry business there. His son died in Frostburg in 1903.

Paul’s credentials were well suited to his chosen profession. He learned the machinery trade from his father, who was a millwright and engine builder with a shop in Patterson, NJ. Paul’s father was born and married in Scotland, and emigrated to the United States in 1818. Paul was born in New York on March 10, 1820. He was apprenticed in his father’s shop, and later, at the age of 15, to the Rogers Locomotive Works in Patterson, NJ. He was there in 1837 when the works completed its first locomotive. He served for seven months as engineer on the Patterson & Hudson Railroad, the youngest engineer in charge of a locomotive. Paul then worked at his father’s locomotive works in Baltimore for ten years as general manager. His father had purchased the facilities from William Winans, son of Ross Winans, a noted locomotive designer and builder. Paul journeyed to Paraguay in 1850, returning to Baltimore by way of England. By 1854, he was Master Mechanic for the Cumberland &

Pennsylvania in Mount Savage. In that year he also married Marian Neff of Kuntztown, PA. They had two children, John Thomas Haig Paul, and Ella Marian Paul (later, Hitchens).

Paul may have built the first narrow gauge steam locomotive in the United States. The Mt. Savage Railroad had reached Frostburg some three years earlier. He expanded his business to produce narrow gauge mine locomotives and stationary boilers. He is listed in the Census of 1860 as having $5,000. of property. In the 1870 Census, this has increased to $16,000 in real estate, and $7,000 in property. The Depression of 1882-85 was hard on the company, and Paul moved the company to Baltimore in 1883. He was in debt to the Betts Machine Co. for some $5,000. They sued Paul, and the result was the foundry in Frostburg was sold at Sherriff's auction.

By 1872, R.C. Paul advertised as a founder and machinist, with shops on the south side of the C&P tunnel. A member of the Lutheran Church, he cast bronze and brass, and was the inventor of a type of heating radiator used in churches. The 1893 Frostburg City Directory lists Thomas H. Paul & Son as having a facility at the foot of Mill Street. Paul's Foundry in Frostburg was extensively damaged by a cyclone in 1890. The Frostburg Mining Journal of March 15, 1883 mentions a 4-horsepower gasoline engine he built.

T. H. Paul was producing narrow gauge engines for the railroads, using his old employer, the C&P shops, under subcontract. He sent his drawings and patterns to Mt. Savage to get the parts made. The C&P shops were doing $10,000 a month worth of work for Paul in the period 1881 through July of 1884. His son Thomas was general manager. An extension shop in Cumberland was considered in 1882. Around 1882-1883, T.H. Paul bought buildings in Baltimore. The Company moved there in 1883. There were financial problems resulting from the Depression of 1882-85. The Cumberland *Civilian* newspaper of Aug. 19, 1883, mentions a receivership.

The period beginning 1883 was actually a busy one for heavy manufacturing in Mt. Savage. A locomotive catalog was issued for the Works by their agent, Thomas B. Inness & Co. of Broadway, New York. The catalog listed five types of engines for sale. Numerous sales resulted. Narrow gauge engines proved so popular a product that the works installed a third rail up the main line from Mt. Savage for customer acceptance testing. The narrow gauge equipment, 4 of the 5 types listed in the catalog, was all of the Paul pattern. The Mt. Savage Shops shipped quite a few narrow gauge engines of the Paul pattern. Up to that point, Mt. Savage had only built standard gauge units.

Locomotive Shipments

This section discusses the customers for T. H. Paul locomotives. As of this writing, we currently know of 26 rail lines that got Paul products. The actual number is uncertain, because locomotives were resold to other lines, and lines merged, and changed names. Some went through broker Southern Iron & Equipment multiple times. If anyone has additional information I could include in a future edition of this book, to make it more correct and complete, I hang out on the Facebook page of the Western Maryland Chapter of the National Railway Historical Society.

Alabama Lumber Co.

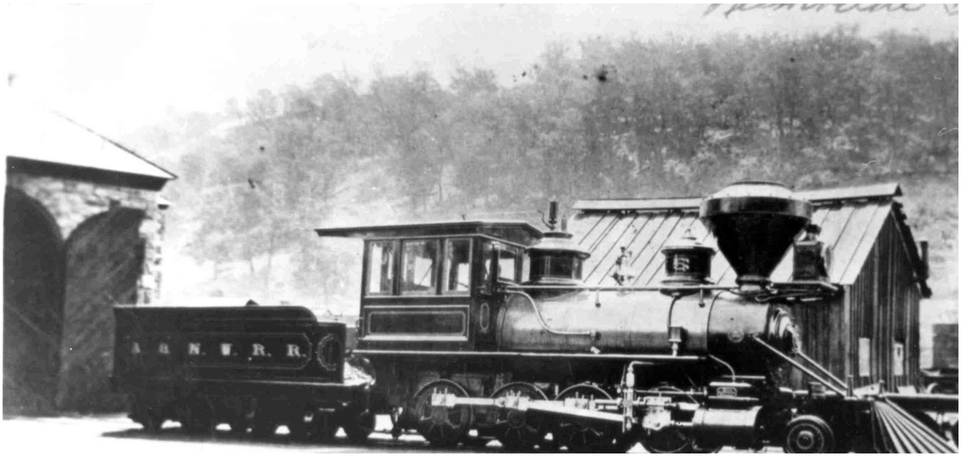
In Alabama, Mr. H. T. Simms' Alabama lumber company had a 4-4-0 unit, bought third-hand for his logging railroad. The line had 8 miles of track, with 3 locomotives at its peak, and 15 cars. The line seems to have operated from 1903 through 1908 at least.

In 1892, Mount Savage outshopped the *S. C. Dorsey*, a narrow gauge 4-4-0, for the line

Austin & North Western

The Austin & North Western Railroad was a narrow gauge line that wandered north and west from Austin, Texas. This Texas narrow gauge shortline had 5 engines, all from T.H. Paul. He built the first four at his shops, and had Mt. Savage build the fifth one. The 5th engine had 3-foot gauge, 15" x 18" cylinders, and weighed 28 tons. A picture of that engine, outside the shops at Mt. Savage, shows the third rail on the line up to Paul's shop. There was narrow gauge as well as standard gauge track from Mt. Savage to Borden.

The A&NW number one, named *J. A. Rhomberg*, was a 4-4-0, with 38.5 inch wheels, 12” x 18” cylinders, weighing 19 tons. It was acquired in 1881. The identical number 2 engine was acquired in 1882, and named *H. W. McNeill,* as well as the Number 3, the *J. K. Graves*. Locomotive numbers 4 and 5 don't seemed to have been named. Number 5 went to SI&E as number 1264. Another locomotive, a 4-4-0 with 44 inch wheels and 12 x 18 cylinders, same weight, also went to SI&E.



The most important job of the Austin & North Western was to haul 50,000 tons of pink granite from quarries to build the new Texas state house at Austin. Doubtless, Number 5, the big engine, did the bulk of the work.

This engine was listed as Mt. Savage serial #33 by the Southern Iron & Equipment (SI&E) Company, a broker, in 1918. It went to the Tallahalla

Lumber Co. in Mississippi, and worked on that line for some years. It then came back to SI&E, and was listed as #1264. The engine was then sold to the Madrozo Sugar Company (Compania Amuracera Madrozo S.A.) of Cuba as their #4 on 26 August 1918. It was reported retired in 1958. A drawing, courtesy of Mr. Albin Lee, of Austin, Texas, shows the engine as it came to the Austin & North Western, and as it was in service in Cuba.

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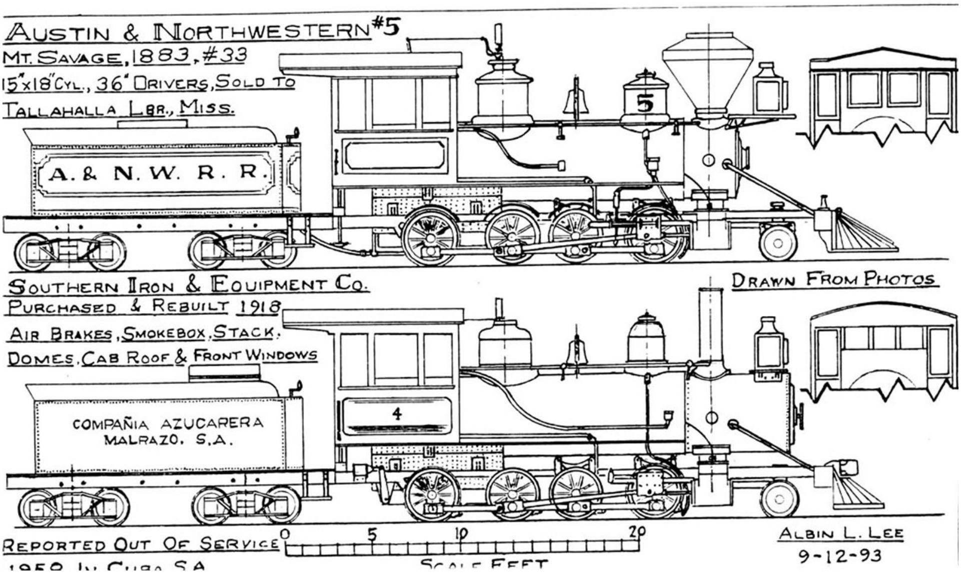


In February 1882, Paul shipped a 22-ton passenger locomotive to Ohio, then in March he shipped a 20-ton unit, built at Mt. Savage, to Texas. Fifteen locomotives were shipped by Paul between 1880 and 1883. He is reported to have done "a very extensive business in Cuba." The Rehor letter (see references) lists nine engines built at Mt. Savage for resale by Paul. At the time of the Civil War, an average locomotive cost between $8,000 and $10,000, and prices remained stable for many years.

Barton Coal Mining Company

This company's mine was located at the top of Moore's Run, near the tow of the same name. The Barton Coal Company plane, a cable railway, was built in 1854 by engineer O. D. Robbins. It operated until 1898, and was used to bring coal down to the railroad. Barton was served by the Cumberland & Pennsylvania Railroad, and even had a passenger station. It is possible the narrow gauge engine was delivered by the earlierGeorges Creek Rail Road.

In 1864 the Company had bought a 0-6-0T engine from Paul. That's about all that is known.

Bradford, Eldred, & Cuba Railroad

Located in Allegany County, New York, this line connected an oil field with the towns of Bradford and Cuba. In 1882, an 0-4-0T was outshopped for them from Mt. Savage. It had 30 inch wheels, 9 x 15 cylinders, and weighed 10 tons. This became their locomotive #1.

Brighthope Railway

In 1882, this line got a 2-6-0 narrow gauge engine, with 14x18 cylinders, 36 inch driving wheels, of a weight of 22 tons. It was numbered 5, and was a Paul produced unit, second hand from the P&W railroad. In 1883, the Bright Hope narrow-gauge railroad terminal was constructed at Bermuda Hundred, Virginia. The Bright Hope, also known as the Tidewater and Western, carried lumber, coal and flour from the Piedmont to be loaded on schooners and freighters for ports throughout the world.

The Brighthope was formed in 1877, in Virginia, by the creditors of the bankrupt Clover Hill Railroad. The line also offered passenger service. In 1881, the line was rebuilt from standard to narrow gauge. They had four locomotives. The railroad was sold in foreclosure in 1889.

C. H. Mason, Michigan

This gentleman from Michigan got a 0-4-0T locomotive from Paul in 1882. It had 30 inch wheels, 9x15 cylinders, and weighed 10 tons. What we don't know is the name of the railroad.

Clarksburg, Weston, & Glenville

The C, W, & G was created from the Weston and West Virginia Fork Railroad in 1879. It went from Clarksburg to Jane Lew, WV. Jane Lew was the mother of the Town's founder. It was situated in rich farmland, and had a marble works. It then extended to Weston, WV in 1879. The line handled mail service. All the iron parts, the rails, spikes, fish plates, etc came from the Riverside Iron Works in Wheeling, WV.

Mount Savage Locomotive outshopped number 36 in 1883 for this West Virginia narrow gauge line. At that time, the line was extended to Buckhannon, WV. It merged with the Weston & West Fork Railroad Company in 1889, forming the Clarksburg, Weston, and Midland RR Company. The line was acquired by the West Virginia & Pittsburgh Railroad around 1891, and converted to standard gauge.

East & West Railroad of Alabama

The East & West Railroad of Alabama (standard gauge) originated in Pell City, where it connected with the Southern (standard gauge) and the Talladega and Cousa Valley (narrow gauge).The line headed north to the Georgia state line, where it connected to the Rome and Carrollton Railroad. It terminated in Cartersville, Ga, where there was a connection with the Western and Atlantic.

The line was built from north to south, and was originally broad gauge, 5'. It was converted to 3 foot gauge in 1879. Later, it would be converted to standard gauge, 4 feet, 8 ½ inches.

In the Mount Savage Works catalog of 1883, there are drawings and specifications of five locomotives, 1 standard, and 4 narrow gauge. Unfortunately, I don't have enough images to include in the book. There is also a letter fro Mr. A. G. West, VP of the East & West, to the Mount Savage shops, mentioning that the American style (4-4-0) “has been doing excellent work” He goes on to say that “It has been hauling a regular train of 285 tons over the difficult grades of our road the heaviest of which is 120 feet to the mile. 1000 feet long.”

Farmville & Powhattern Railroad

An interesting story concerns the sale of two locomotives to the Farmville & Powhattern Railroad in Virginia, near the James River. It was chartered in 1884, and hauled mostly coal, and some tobacco. Its rails and equipment were sold to the Government of France during World War–I. The line was dismantled and made ready for shipment in June of 1918. The rails made it, but it is unclear whether any of the locomotives did. Their Paul Engine numbers 4 and 7 were 2-6-0 units. Number 7 went to broker S, I & E as #1027, and was sold to a sugar company in Cuba.

F. C. Norte Occidental

This company bought ex-Farmville & Powhatten Number 7 through Southern Iron & Equipment (unit 1027). It worked the sugar plantations.

Franklin & Pittsylvania Railroad

This railroad, near Rocky Mount, Va. was tasked with carrying iron ore, hematite and magnetite, from the Pennsylvania Steel Co. lands at Pittsville, Virginia, to Elba. It had been discovered in the 1860's, and the line was built in 1878. By 1886, the iron ore was mostly exhausted, and the line was used for carrying lumber. The F&P, the locals said, stood for “Fast and Perfect.”

They only had one engine, and 8 miles of track. The line connected with the Lynchburg and Danville Division of the Southern Railroad.

The line was extended from Pittsville to Rocky Mount, connecting with the Southern at one end, and Norfolk & Western's Pumpkin Vine Railroad.

The history of the line mentions the locomotive burned wood. Farmers along the right-of-way would cut and stack wood, and would be paid $1.50 a cord. The line did haul the mail, and had a passenger coach.

At the town of Gretna (Franklin Jct.) , the trucks on the freight cars were changed out for standard gauge trucks. The line was re-gauged in 1886.

Eventually, the line went bankrupt, the locomotive and rolling stock were sold for scrap, and the rails ripped up. A sad occurrence that happened at many place across the country.

Mr. Ramsey, in his history of the line (see references) says:

“There were three classes of tickets sold on the F&P. One if you got on and stayed on, one if you got off and walked, and one if you got off and pushed. They all cost the same.”

He also relates the story of the preacher who was walking along the line. The Engineer stopped and asked him if he wanted a ride. He said, “no thanks, I'm in a hurry.”

Franklin Coal Company

In 1871, the Paul Works works completed an 8-ton narrow gauge engine for the Franklin Coal Company of Connellsville, PA. At one time, Connellsville was served by 5 standard gauge lines. It was at one time the “Coke Capital of the World,” using its abundant coal supplies. It also had, more millionaires that any other City in the U.S. and maybe more beehive ovens for coke production. It also hosted the, producing steam-powered run-abouts.

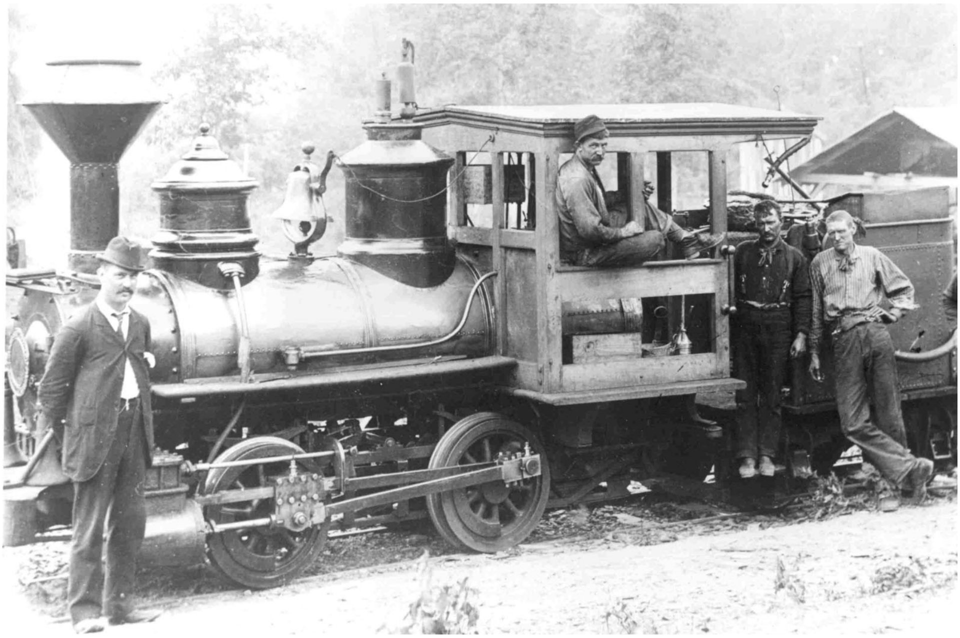
Grafton & Greenbrier

This line operated from 1881 to 1892, and was absorbed into the B&O system. It had a 2-6-0 unit that was built as Pittsburg & Western No. 4 in April 1882, and acquired in November 1887.

Green Ridge Rail Road

Two units went to the Green Ridge Railroad (GRRR) of eastern Allegany County, Md. Number 1 is featured in an illustration in the Mt. Savage catalog as the model for the 0-6-0 units. GRRR Number 2 is an 0-4-0 unit. The rail line was eight miles to the east of Cumberland, in the vicinity of Town Hill and Fifteen Mile Creek. It belonged to the Merten family, and supplied timber to a sawmill at Oldtown. The lumber was used by the Merten's boatyards in Cumberland to construct canal boats. The railroad operated from 1889 to 1897. It interchanged with the B&O railroad near Paw Paw, WV, after crossing the Potomac on a trestle bridge. Disposition of the engines is unknown. The area is now the State of Maryland's Green Ridge State Forest.

It is noted in C&P correspondence that a 2-6-0 narrow gauge had been built for Messrs Heizn & Merten. Heinz was a business partner.



Green Ridge Railroad workers, hard at work.

Kansas and Gulf Shortline

This company was chartered in 1880, with the purpose of connecting Tyler, west of Wichita, with Sabine Pass in Texas, on the Gulf near Port Authur. It acquired the assets of Rusk Transportation Company, mostly the 17 mile line out of Rusk. This was used for the construction of a line between Rusk and Tyler. The rest of the line, 44 miles between Rusk and Luftin was completed in 1885. Now they had 90 miles of narrow gauge mainline.

A sale from T. H. Paul in 1880 shows a 2-6-0 going to this line. It had 44 inch wheels, and 12 x 20 cylinders. The weight was 24.5 tons. It got the road number 1.

In 1887, the company was sold to the St. Louis, Arkansas and Texas Railway Company of Texas. Then, both companies entered receivership in 1889, and the properties were sold at foreclosure to Louis Fitzgerald. Fitzgerald conveyed what was the former Kansas and Gulf Short Line to the Tyler Southeastern Railway Company on January 13, 1891. This eventually became the Cotton Belt Railway.

Kirby Lumber Company

The Kirby Lumber company operated in South East Texas. Its records are held at the East Texas Research Center, Austin University.

At its peak, the company had 17 lumber mills, fed from 900,000 acres of virgin pine forest. Kirby helped organize the Southern Pine Association

One of their locomotives was a 2-6-0 Paul, cylinders 14” x 18”. They were not the original owner.

Little Miami Railroad

This Ohio railroad had a Paul 2-6-0, with 36 inch wheels, and weighted in at 20 tons. The railroad reached the village of Freeport, later named Oregon, and then Oregonia in 1882. The rail line is now a bike trail, and the village is a ghost town.

Madrozo Sugar Company

The Compania Amuracera Madrozo S.A. of Cuba got one of the Texas engines as their #4 on 26 August 1918. It was reported retired in 1958. See the drawing of the engine in the Austin and North Western section.

Pacific Coast Railway

The Pacific Coast Railway (California narrow gauge) is distinct from the Pacific Coast Railroad (standard gauge, Washington State), and the Pacific Coast (tourist) Railroad in California.

Three engines went to the narrow gauge Pacific Coast Railway in California, One of these was a 4-4-0, (numbered 3) and two were had a 2-6-0 wheel arrangement (#4 - 102 and #5 - 103). Cylinder size was 12x18 on the smaller engine, 15x18 on the larger ones. The 0-4-0 had 44 inch wheel, and the others had 36 inch. Information on these units can be found at the San Luis Obispo Railroad Museum.

The original track was 10 miles in extent, from San Luis Obispo to the beach, and late extended southward, to Santa Maria and then to Los Olivos. The railroad replaced an earlier horse-powered tramway. Early steam operations used two Baldwin and three Grant locomotives, as freight service increased.

The Oregon Improvement Company got controlling interest in the Pacific Coast Steamship Company in 1882, which included the railway, which was extended south to Los Angeles.

Peach Bottom Railway

The Peach Bottom Railway of Lancaster County, Pennsylvania, was chartered in 1868. The prime mover was Stephen Boyd, representing York County in the General Assembly of Pennsylvania. The use of the 3-foot gauge was suggested by their chief John Mifflin Hood, later president of the Western Maryland line. The railway purchased a Mount Savage locomotive second-hand from the West Virginia & Pittsburgh. The Peach Bottom was a narrow gauge predecessor to the Maryland & Pennsylvania.

This engine is mentioned in “The Ma & Pa: A History of the Maryland & Pennsylvania Railroad,” by George Hilton. Ground was broken in 1871 on the Eastern Division, called the Philadelphia & Baltimore Central, and the Western Division. The middle Division posed some challenges, due to the mountains. The Company survived the bank panic of 1873. The middle division opened from York, west to Red Lion, Pa. The prospect of bridging the Ausquehanna loomed. The line was never completed. The eastern Peach Bottom Railroad was supposed to connect with the East Broad Top around 1878, but never did. The middle part became the York and Peach Bottom Railway. That part was acquired by the Maryland Central, and the resultant line was renamed the Baltimore & Lehigh Railroad, circa 1891. The Peachbottom part became the locally owned Lancaster, Oxford, and Southern,

Pittsburgh & Western

The P&W was formed in 1877, as the Pittsburgh, New Castle, & Lake Erie. It started service between Etna, Pa. and Zelienople, north of Pittsburgh, in 1878.

Unfortunately, the line had to be sold at Sherif's sale in 1879. It was reorganized into the Pittsburgh & Western, and the road was extended to Allegheny City and Wurtemberg by 1880. In 1881, there was a consolidation of the road with the Parker & Karns City, the Karns City & Butler, the Red Bank & Youngstown, and the Pittsburgh East and West Railroads. The line was extended from Wurtembereg to Youngstown, from Hiawatha to Butler, and from Parker to Foxburg.

The Pittsburgh & Western got two locomotives, a 2-6-0 unit built in March 1882, and resold in April 1884 to the Bright Hope Railway as their number 3. Another 2-6-0 unit was built as P&W No. 4 in April 1882, and was later sold in November 1887 to the Grafton & Greenbrier railroad. The Pittsburgh & Western was absorbed into the B&O system by 1893, beating out the rival Pennsylvania Central. The engines were listed on their roster for that time.

Saratoga, Lake George, & Mt. McGregor Railroad

In July 1885, Ulysses S. Grant traveled from New York City in Mr. Pullman's personal railcar, up along the Hudson River, through Poughkeepsie and Albany, to Saratoga Springs. He then took the narrow gauge Saratoga, Lake George, & Mt. McGregor Railroad to the Balmoral resort hotel at the mountain top. President Grant died in Drexel Cottage on Mt. McGregor shortly after. His body was brought back down the mountain by train. The 3-foot gauge railroad, opened in July of 1882, had three locomotives. It was converted from narrow to standard gauge by November of 1883. There is a good possibility, although not confirmed, that these were from T.H. Paul. Unfortunately, T. H. Paul did not affix builders plates to his locomotives.

Silver City, Deming, & Pacific

This line was located in New Mexico, north of the border with Mexico. and west of Las Cruces. Silver City had a smelter for the silver ore. The narrow gauge line provided a transportation option for that facility. The Standard Fe standard Railroad arrived in 1886, and there was actually also a 2-foot gauge Silver City, Pinos Altos, and Mogollon, The connection to Paul and Mount Savage is a note, from Mr. J. W. Smith, General Superintendent of the SC, D, &P to Mr. P. I. Burwell, General Superintendent of the C&P, mentioning their 1883 purchase of a Mogul (2-6-0) narrow gauge locomotive. In the letter, he say "..the acting Master Mechanic...thinks she is a good machine and is well pleased with her."

Southern Iron & Equipment Company

The Southern Iron and Equipment Company (SIECO) of Decatur, Georgia, and Ashland, Tennessee, was a broker and re-conditioner of locomotives. It was located in Atlanta, Georgia. They kept meticulous records, most of which reside at the Smithsonian, in the form of 4 x 6 cards. These have not been scanned into electronic form. I list here the Paul-manufactured locomotives that passed through the company, with incomplete information on the original source.

Mount Savage number 33, went to Anniston and North Western in Texas as their number 5, then to the SI&E, then to the Tallahalla Lumber company. It then went back to SI&E as 1264, and wound up in Cuba, on the Mardozo Sugar Company Railroad. A Paul 2-6-0 engine that went to the Farmville & Powhatten as their number 7, went to SI&E as 1027. That engine went to the Cuban company F. C. Norte Occidental.

There is a listing for an engine numbered 71 at SI&E, a 4-4-0, 44 inch wheels, 12 x 18 cylinders, 19 tons. There was a 2-6-0 from Virginia Lumber, number S&IE 1379, 40 inch wheels, 10x16 cylinders, 24 tons.

A 2-6-0 with 40” wheels, and 10x16 cylinders went to SE&I as their 1379. No record of the original owner was found. This loco was sold to a Virginia lumber company. Another Anniston and North Western, either their number 3 or 4, went to SE&I as their number 320. That would have been a 4-4-0 with 38.5 inch wheels, 12 x 18 cylinders, weighing 19 tons.

Tallahala Lumber Co.

Located in Mississippi, this line had one locomotive from Paul, via the Austin & NW. This entity, located in Ellisville, held vast amounts of yellow pine timberland. It had 12 miles of standard gauge track, and a mill, from the Easterling Lumber Company. The final miles were provided by the Gulf and Ship Island Railroad, who increased their rate until the Tallahalla operation was squeezed out of business, The railroad was sold to the Major-Sowers Saw Mill Company in 1921.

The line had two standard gauge locomotives from Lima, two narrow gauge from Baldwin, finishing out with a second-hand Mount Savage produced 2-8-0. It also rostered a narrow gauge Shay.

The Mount Savage engine, numbered 33, produced by the C&P for Paul, was a 2-8-0 unit, circa 1883. It had 36 inch wheels, 15x18 cylinders, and weighed 56,000 pounds.

It was originally Austin & Northwestern #5. That engine went to the Eagles Mere Railroad in Pennsylvania in 1892. That line serviced the Resort of Eagles Mere, a planned resort town, from the Williamsport and

North Branch Railroad in Sonestown in 1892. The W&NB was a logging and anthracite railroad, that also featured passenger traffic to resort locations. It also fell to the advent of the automobile. It had a connection with the Susquehanna & Eagles Mere Railroad, a logging line. The advent of the automobile killed this service. It then went back to broker Southern Iron & Equipment, then to the Kingston & Central Mississippi in 1901, then to W. S. Carter in Orange, Mississippi in 1903. After service on the Tallahalla line, it went back to Southern Iron & Equipment, numbered 1264. It wound up at Compania Azurcarera Madrazo, S. A. in Cuba, as their number 4 in 1918. Final disposition is unknown.

Toledo, Delphos & Burlington

The Toledo, Delphos & Burlington resulted from a merger of several prior Ohio lines in 1875. In 1881, the line formed an agreement with its neighbor, the Iron Railroad of Ironton, Ohio, to dual gauge part of that lines right of way. The Iron Railroad had been built to a 4 foot, 10 inch gauge, and the T, D, &P put its 3-foot gauge down the middle. Later that year, the Iron Railroad was merged into the T, D, & B. The T D & B in 1881 merged with its subsidiary, the Toledo, Cincinnati and St. Louis Railroad (TC&StL), and took its name.

The Toledo, Cincinnati & St. Louis Railroad, also a 3-foot gauge, was a subsidiary of the T, D, & B, but they merged in 1882, keeping the T, C & StL name. This company went into receivership in 1883, and was broken up into several companies. The Iron Railroad converted to standard gauge in 1887.

Three Paul locomotives went to the line in Ohio as their numbers 39, 40 and 47. These were all of the 4-4-0 wheel arrangement. Purchase dates are January and February of 1882. They had 44 inch wheels, and 12 x 18 cylinders. The railroad numbered them 39, 40, and 47. Disposition is unknown.

West Virginia & Pittsburg

This line was incorporated in West Virginia in 1876. The company went into receivership in 1898. The line was to tap the rich timerlands, and haul product to Cowen, WV on the Williams River. The Baltimore & Ohio took over the line in 1899. It bridged the C&O and B&O. Eventually, the line merged into CSX.

It sold one of its Paul engines second-hand to the the Peachbottom, probably when it became standard-gauged.

Just letters

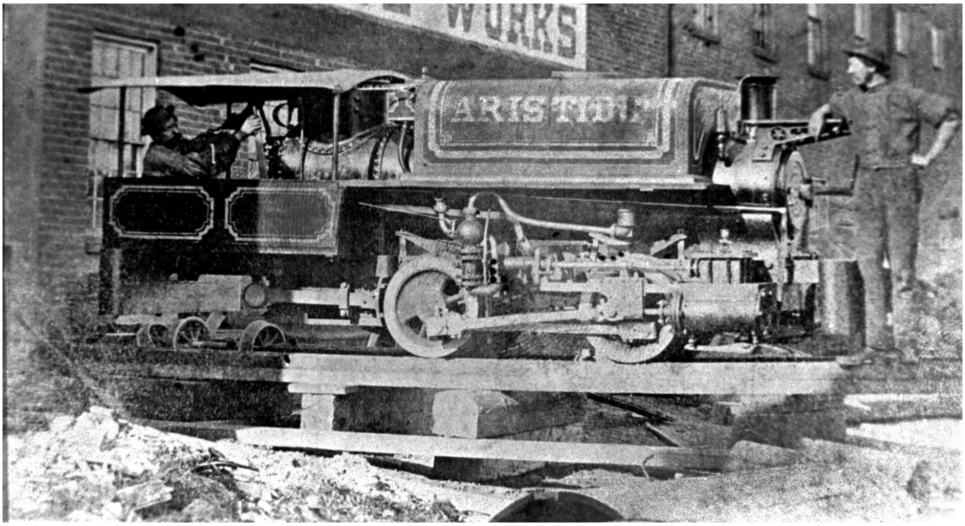
There is data that Paul shipped out locomotives to more railroads, identified only by their abbreviations. I was not able to identify these. If any one has additional information, please let me know. I'm on the Facebook page of the Western Maryland Chapter of the National Railway Historical Society.

The “J & A” had a 4-4-0 engine from Paul, 44 inch wheels, 16x20 cylinders, circa 1885.

A Mister “C. H. Mason,” of Michigan whose affiliation is unknown, got a 0-4-0T locomotive in 1882, 30 inch wheels, 9 x 15 cylinders, weight 10 tons,

Locomotive Aristide

Paul built a strange 0-4-0 engine that was named *Aristide*. It was a “fireless cooker,” meaning it did not have a firebox, but used a tank or accumulator filled with superheated water from a stationary source, and the engine worked until the pressure dropped too low. This would allow the engine to work in a mine, hauling out filled cars, rather than use horses or mules. It could also work in a flammable environment. At the moment, the customer for the engine was unknown.



Picture taken 1884 at Paul Shops.

According to C&P correspondence of 1883, a 3-foot gauge Passenger locomotive went to the Chicago Exposition (Great Columbian Exposition) for display and advertising purposes.

The Agent for locomotive sales from Mt Savage and the T. H. Paul Works was Thomas H. Innes, of New York.

Western Maryland to Cuba

This section discuses the Paul locomotives who retired to sunny Cuba, to work the sugar plantations.

Austin & North Western was sold to the Madrozo Sugar Company (Compania Americana Madrozo S.A.) of Cuba as their #4 on 26 August 1918. It was reported retired in 1958. SI&E 1264, prior Mount Savage serial number 33, a 2-8-0. See the drawing of the engine in the Austin and North Western section.SI&E 1027, a 2-6-0, went to F. C. Norte Occidental in Cuba. This was Ex-Farmville and Powhatten #7.

known T.H. Paul engines

Updated 2/22/19

build	type	wheel	cylinder	weight	customer	road number, name
1892	4-4-0				Alabama Lumbe	S. C. Dorsey
12/1881	4-4-0	38.5	12x18	19	A&NW	#1, *J. A. Rhomberg*
3/1882	4-4-0	38.5	12x18	19	A&NW	#2, *H.W. McNeill*
6/1882	4-4-0	38.5	12x18	19	A&NW	#3, *J. K. Graves*
8/1882	4-4-0	38.5	12x18	19	A&NW	#4
1883	2-8-0	36	15x18	28	A&NW	#5, SI&E 1264
1864	0-6-0T				Barton Coal	
3/1882	0-4-0T	30	9x15	10	B,E,& C	#2
1882	2-6-0	36	14x18	22	Brighthope	#5, ex-P&W
4/1882	0-4-0T	30	9x15	10	“C.H. Mason, MI	
1883					C, W, & G	#36
4/1882	4-4-0T		12x20		East & West	#1
1871				8	Franklin Coal Co.	
	2-6-0	36	14x18		Franklin & Pitts.	
	2-6-0	36	14x18		Farmville & P.	#4
	2-6-0	36	14x18		Farmville & P.	#7
	2-6-0	36			F. C. Norte, Cub	ex-F&P
					G & G	
1883	2-6-0	36	8x11		GRRR – Mertens	#1
1883	0-4-0	30	9x14	11	GRRR – Mertens	#2 *Flintstone*
1885	4-4-0	44	16x20		J & A	
1880	2-6-0	44	12x20	24.5	Kansas & Gulf	#1
	2-6-0	36	14x18		Kirby Lumber	
6/1882	2-6-0	36		20	Little Miami RR	
	2-8-0	36			Madrozo Sugar	A&NW #5
4/1882	2-6-0	36	14x18	22	P&W	#4
4/1881	4-4-0	44	12x18	19	Pacific Coast	#3, 104
4/1881	2-6-0	36	15x18	24.5	Pacific Coast	#4, 102
4/1881	2-6-0	36	15x18	24.5	Pacific Coast	#5, 103
					Peachbottom	2nd hand from WV&P
1883	2-6-0	36	14x18		SC, D, &P	
	0-4-0T	30			S, McM, &LG	#1
	4-4-0	44	12x18	19	SI&E	#71
	2-6-0	40	10x16	24	SI&E	#1379, Va. Lumb.
1882	4-4-0	44	12x20	19	SI&E	#320, ex-A&NW
1/1882	4-4-0	44	12x18	19	T, D, & B	#39

2/1882	4-4-0	44	12x18	19	T, D, & B	#40
2/1882	4-4-0	44	12x18	19	T, D, & B	#47
1883	2-8-0	36	15x18	28	Tallahalla Lumb	to A&NW
	0-4-0	30			tbd	Aristide
1882	2-8-0	50	20x24		WV&P	to WM, scrap '05

The Paul Works

At its peak in 1881, the Paul works employed 60 men. The foundry building measured 33 feet by 70 feet, and numerous machinery, storage, and engine houses were adjacent. A branch foundry was located at Cumberland, at the corner of Davidson and Front Streets. That would have been near the Lena furnace. The facility used local coal and firebrick. Plentiful iron was available by rail from Pittsburgh. After he lost the Baltimore property, Paul returned to Frostburg, where he experimented with gas engines. Hilton (see Refs) gives Paul's yearly production of locomotives as: 1880 – 1, 1881 – 4, 1882 – 10, 1883 – 8, for a total of 23.

The pattern room of the foundry was located above the machine shop. Here, wooden forms were built to allow the rough casting of parts. In the casting department, molten metal was poured into sand molds made around the patterns. The cooled rough castings were finished in the machine shop. Here, lathes, planners, mills, and drills were driven by leather belts from an overhead main shaft, powered by a stationary steam engine. In the adjoining boiler room, steam punches, hammers, and rolls would be used to shape and form iron plate. The blacksmith’s shop, next to the boiler room, made and repaired tools. Wooden frame and coachwork, and boiler lagging would have been done on site, or parceled out to local artisans. The shops probably produced almost all of the locomotive from raw materials.

Shops like Paul’s were the backbone of the industrial revolution, and the center of innovation in the age of steam. His shops, like the iron furnace facility at Lonaconing and the industrial center at Mt. Savage, provided and depended upon the transportation infrastructure that was essential in the emerging world power that was the United States.

Paul traveled to Trinidad, Colorado, in June 1889. He was considering moving his facilities there. He chose, however, to establish a branch foundry in Sioux City, Iowa, in 1889. The Maryland properties and residence were sold in 1898. His wife died in Frostburg in 1890.

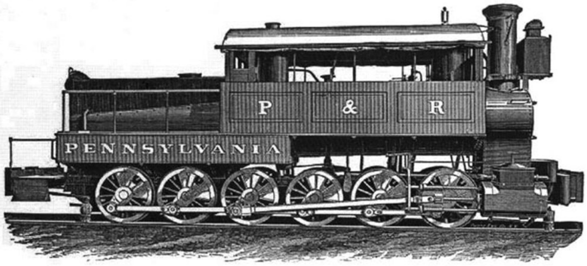
Big Iron and Opera

There was a *Paul's Opera House* in Frostburg. It was built as Centennial Hal in 1876, but operated in Paul's name. He was the builder, and his son, John T. H. was the designer. The auditorium was on the third floor, and it was said to seat 500. It was later called the Lyric Theate. There was a fire in 1917, and another in 1921. The building had been rebuilt after both. In the May 17, 1921 fire, it was reported to have burned for 5 hours. There were 8 people inside when the fire was discovered, but all escaped without harm.

James A. Millholland

The C&P locomotive shops were established in Mt. Savage in 1866, under the direction of James Millholland. The original locomotive shop was constructed of stone and was 90 feet x 250 feet in size with a 33 foot high roof. An adjoining car shop, built at about the same time, was also of stone and was later extended with a wooden structure. These buildings still stand in Mt. Savage.

James Millholland, Senior was 54 years old when he and his family came to Mt. Savage from Reading, PA. he was a master mechanic and an “advocate of plain engines and simplicity.” He had extensive experience in keeping Winans camel engines running from his earlier work with the Baltimore & Susquehanna and he was credited with many important locomotive innovations. He came in 1866 as the President of Consolidation Coal, and of the Cumberland & Pennsylvania Railroad. He resigned in 1869 to enter the banking business. He was credited with developing the first anthracite burning locomotive, and was Superintendent of Motive Power and Rolling Equipment for the Reading for many years. He is also credited with constructing the first iron deck girder bridge in the U.S. for the Baltimore & Susquehanna near Bolton in the period 1846-47. He was responsible for so many improvements to the basic Winans C*amel* design engine, the class was referred to as "Millholland Camel's". He is credited with designing a 12-wheeled camel engine, built in the Pennsylvania & Reading shops in 1863. He registered a series of patents from 1843 to 1870.



PENNSYLVANIA
THE first engine to be built with six pairs of driving wheels was the Pennsylvania, designed by James Milholland and completed at the Philadelphia & Reading Shops in 1863. It was intended and used for pusher service, particularly in handling coal trains over the summit of the hills between the Schuylkill and Delaware Rivers.

Though originally both fuel and water were carried on the engine, when it was rebuilt in 1870, with the rear pair of drivers omitted, a separate tender was attached. The principal reason for its being modified was because it had difficulty in negotiating curves, some of which were as short as 320-foot radius. It was so powerful that it was destructive to the light cars then used for handling coal.

Cylinders 20 by 26 inches Weight 100,300 pounds Driving wheels 43 inches in diameter Wheelbase 19 feet 7 inches

In 1830, for the B&O, they built a 4-wheel locomotive with 2 vertical cylinders, and a horizontal boiler. It was named *Johnson*. There was an announcement made by the B&O in the Baltimore *American*, on Jan 5, 1831, that the Company wanted a locomotive of American manufacture and would pay $4000. with $3500 for the runner-up. The Specifications were “no more than 3.5 tons, draw 15 tons on level at 15 mph.” The B&O would supply Winans freight cars, friction of 5 lbs to the ton. Flanges were to be on inside of the rails; 100 psi steam or less; 2 safety valves; steam gauge for >50 lbs, and safety at 100 lbs. It was to be tested for 30 days work on the road, with the Company to supply water and fuel, as well as wheels.

Johnson was the first to enter the contest. The winner was the locomotive *York*, by Phineas Davis. Johnson and Millholland went back to their shop for more tinkering.

In 1835, Millholland got together with James Allaire of the Allaire Iron Works in New York. This firm was a manufacturer of marine steam engines. They manufactured 50% of the early U.S. steamships, and produced the cylinder for the first steamship to cross the Atlantic. In 1850, the firm was taken over by Vanderbilt. The relationship between Millholland and Allaire must have been cordial, as Millholland named his son James Allaire.

In 1851, Millholland's locomotive *Illinois* on the Reading burned anthracite successful It had 2 pairs of 7-foot driving wheels. It was reported to have gone 75 mph. It was built in the Reading shops, with 17” cylinders, and a 30 inch stroke. It weighed 31 tons. He then built for the Philadelphia & Reading a unique double flue engine, which had 2 sections divided by a combustion chamber.

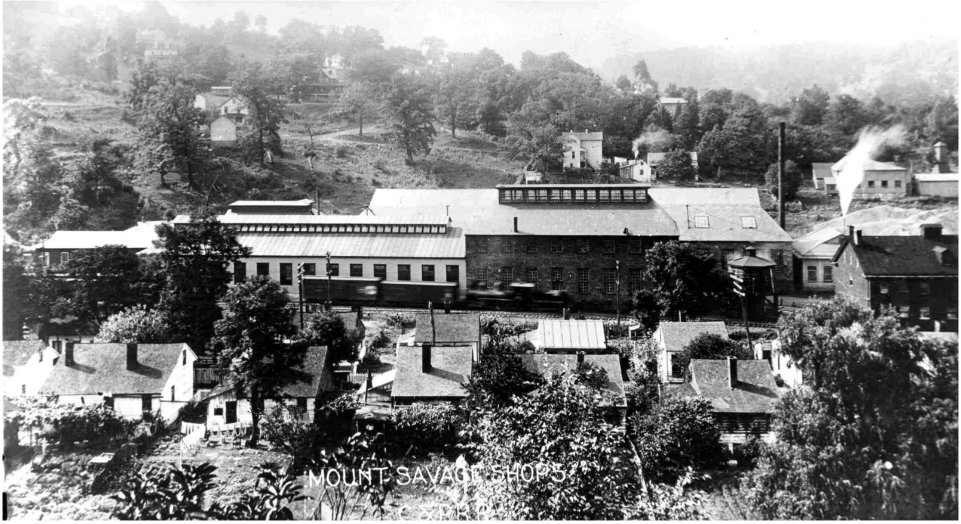
His next big effort, in 1857, was a 12-wheeled loco, the *Pennsylvania* for the Reading. It had 20” x 26” cylinders and a wheelbase of 19' 7”. There was no tender for coal, since it just ran just short helper stints for loaded coal trains of 1.5 miles of 1/155 grade. It weighed 50 tons. The boiler was four feet in diameter, with 174 iron water tubes. It had three water tanks carrying 1,225 gallons.

Mount Savage Shops

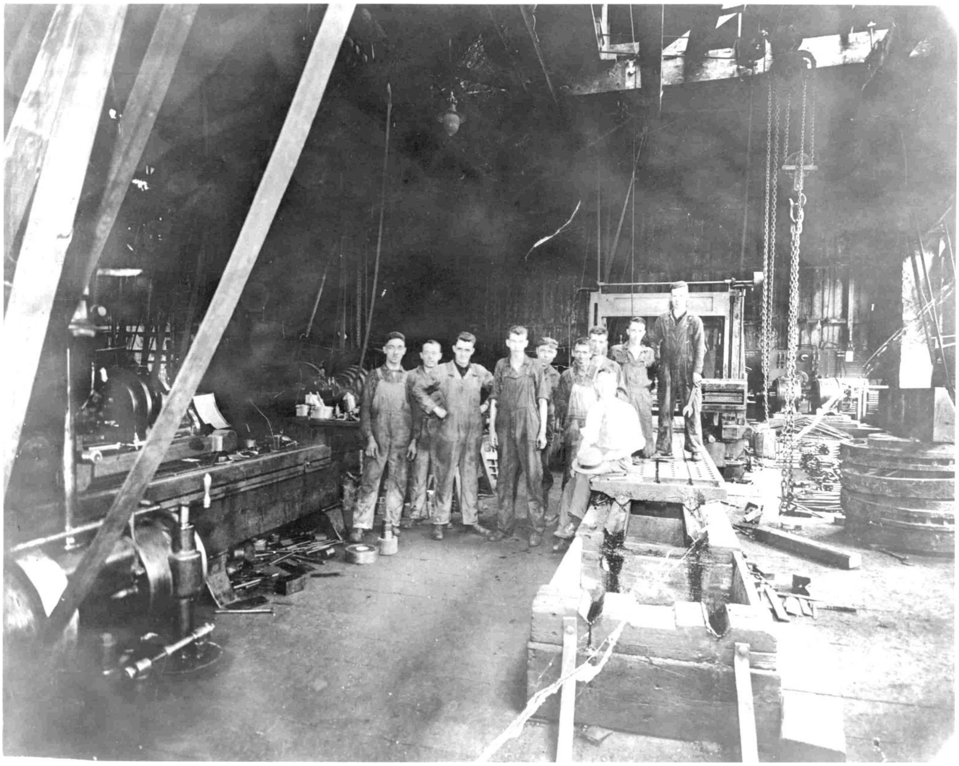
Initially, the work supervised by Millholland at the Mt. Savage Shops was limited to repairing and rebuilding the Winans Camels and other early C&P locomotives. The shop force gained much hands-on experience during the first twenty years; at least 15 of the C&P’s camel-backed locos were rebuilt at Mt. Savage (some twice). Typical of the rebuilds was the engine *Highlander*, a Winans Camel inherited from the Mt. Savage Rail Road. It was a modernization project in which, among other things, the cab was relocated from on top of the boiler to the rear position.

The C&P shops also provided repair services to its rivals in the Georges Creek coal region.

By the 1880’s, Millholland apparently had built quite an extensive operation, able to offer custom built locomotives for sale in addition to meeting the requirements of the parent C&P. The period beginning in 1883 was an exciting one for heavy manufacturing in Mt. Savage. A locomotive catalog listing five types of engines for sale and their specifications was issued for the Works by their agent, Thomas B. Innes & Co. of Broadway, New York.

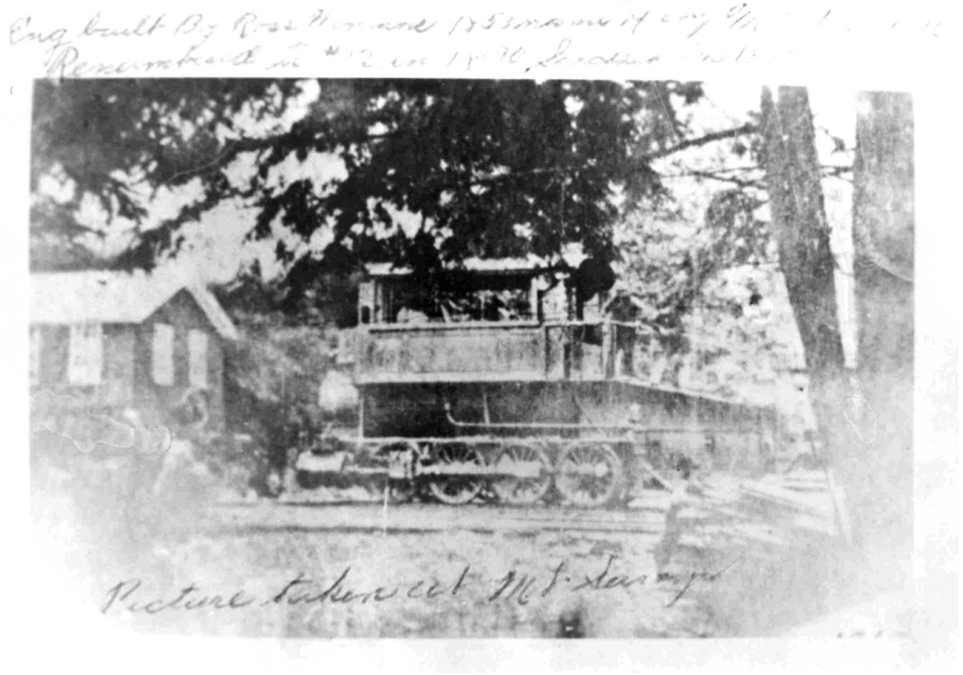


Millholland bought good machine tools, which were still in use 40 years later as evidenced by the 1917 ICC valuation. He equipped the shops with metal working machinery from Bement & Dougherty of Philadelphia. This was a well-known supplier of heavy machine tools for the railroad industry.



Junior

Millholland's son, James A., was 24, when the family moved to Mt. Savage. He had been born in Reading in 1842, and had apprenticed in the railroad shops. He also joined the Cumberland & Pennsylvania, becoming Master Mechanic, and was vice-president by the time his father retired. He left the C&P in 1879 to join the upstart Georges Creek & Cumberland Railroad.


Eng built By Ross Winans 1853 ...
Renumbered to #12 in 1870 ...
Picture taken at Mt Savage

Georges Creek & Cumberland Railway

Millholland served as President of the new line. He had twelve children by his first wife Mary Ann Hoff, and four children by his second wife. One of his sons, Henry, was a gifted mechanical engineer, who worked for the Pennsylvania Railroad and the Baldwin Locomotive Works. He was involved with the early manufacture of bicycles, and the Duryea motor car. Another son, Paul, was a Civil engineer, involved with the survey and construction of the West Virginia Central and Pittsburgh Railway. He died in 1911. James and his wife Virginia and a lot of their children are buried in Rose Hill Cemetery, Cumberland, Maryland. Some of his descendant's still live in Cumberland.

The Georges Creek & Cumberland (GC&C) Railroad was the child of two mining companies, the Maryland Coal Company, and the American Coal Company.

Maryland Coal Company

The Maryland Coal Company was formed in 1870, as a result of as Maryland Legislature action to change the name of the Mutual Coal company, chartered in 1868. An Act of the Legislature in 1878 enlarged the powers granted to the company to engage in the transportation business as well. The American Coal Company was chartered in 1852, and similarly had its charter amended in 1878 to allow it to engage in the railroad business. They were authorized to construct a railroad from their mines to the C&O Canal, or the B&O Railroad.

The Maryland Coal Company had mines on the west rise of the Big Vein, near Lonaconing. Their Kingsland mine operated with 104 men in 1907, delivering 900 tons per day. It used a 42-inch gauge, 2,00 foot long tram road from the mine to a tipple on the GC&C. Their Appleton miner used the same tipple. The tipple loaded coal into the coal hoppers, and had a facility for loading the locomotive tender as well. The tram road operated with a 10-ton locomotive.

Maryland Coal also operated the *Tyson* and *New Detmold* mines with 52 men producing 1000 tons per day in 1907. Here, they utilized a fireless haulage locomotive, which was charged with steam at a central plant near the mine mouth. The 42-inch mine track was operated with 1,600 pound mine cars that had a 5,000 pound capacity.

American Coal Company

American Coal Company's Jackson Mine at Pekin, and Caledonia Mine at Barton, worked the Big Vein. From the mine mouth, a 22-ton locomotive transported the coal cars over a one mile long tram road to a tipple on the GC&C line.

Monopoly

In the Georges Creek Coal Region of Allegany County in the 1870's, the transportation monopoly was controlled by the Cumberland & Pennsylvania (C&P) Railroad, which was owned by the Consolidation Coal Company. Rival companies could not get competitive rates to move their coal from the mines to the B&O and the canal. The solution was seen as two-fold: build a second railroad, and involve the B&O's rival, the Pennsylvania Railroad. The GC&C should not be confused with the earlier Georges Creek Rail Road, built in 1853 to allow shipment of iron products from the furnace at Lonaconing to the planned canal and railroad terminus at Westernport.

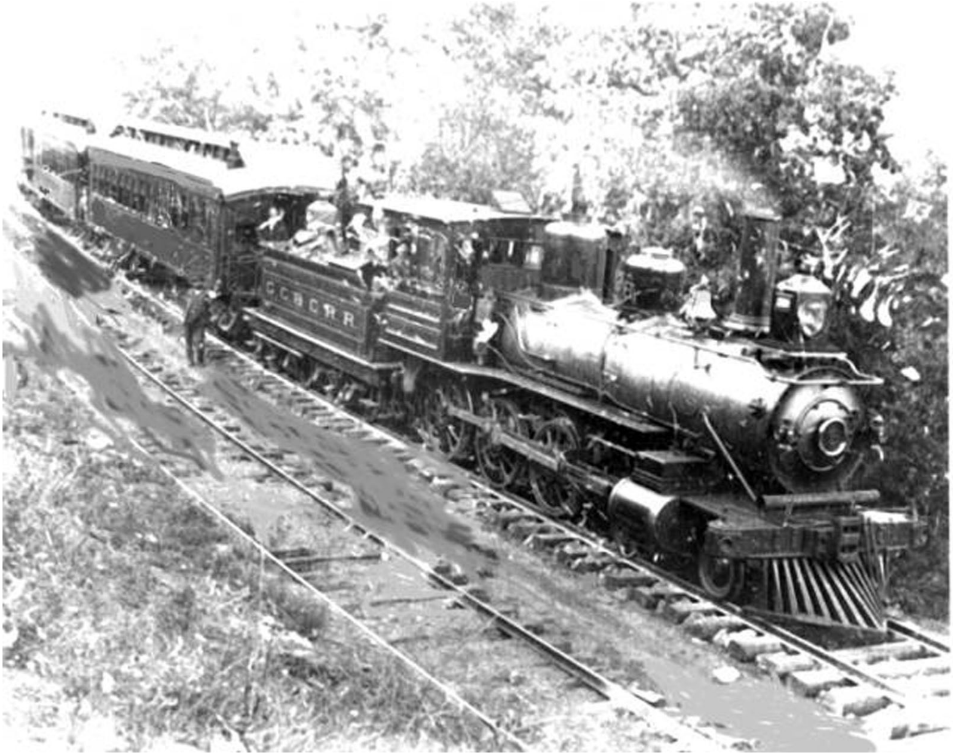
It gets ugly

The GC&C was born out of controversy and competition with the C&P, and this climate of anti-cooperation continued. The GC&C had to fight its way past the C&P into Cumberland, and then fight for the right to reach the canal over B&O trackage. The first fight was at the west end of Cumberland, an area known as City Junction. The GC&C had to cross the C&P's Potomac Wharf Branch, which was there first. The Pennsylvania Railroad in Maryland line had been built from the Pennsylvania state line to the west side of the Narrows. It was their intent to continue down the north side of the Narrows, along with the C&P and B&O mains, to Cumberland. The C&P persuaded the other road to bridge Will's Creek, and continue down the south side of the Narrows, then cross the C&P's Potomac Wharf Branch at City Junction. When the line was built to City Junction, the C&P changed its mind. It kept an engine parked at the intended crossing point, blocking construction. When the engine was a bit late getting back into position one day, the GC&C trackmen forced the crossing. The C&P trackmen tore it out. Tempers flared. The C&P raised its trackbed, making crossing impossible. The final issues were decided in court, in favor of allowing the GC&C crossing with due compensation. Then, the B&O did not want to grant the GC&C trackage rights to reach the canal terminus, and that issue also had to be resolved in court.

Passenger Service

The GC&C rostered a 4-6-0 passenger engine. The GC&C had several passenger cars, including an observation car with open sides. This car was popular for political outings and picnic excursions, but not in the winter.

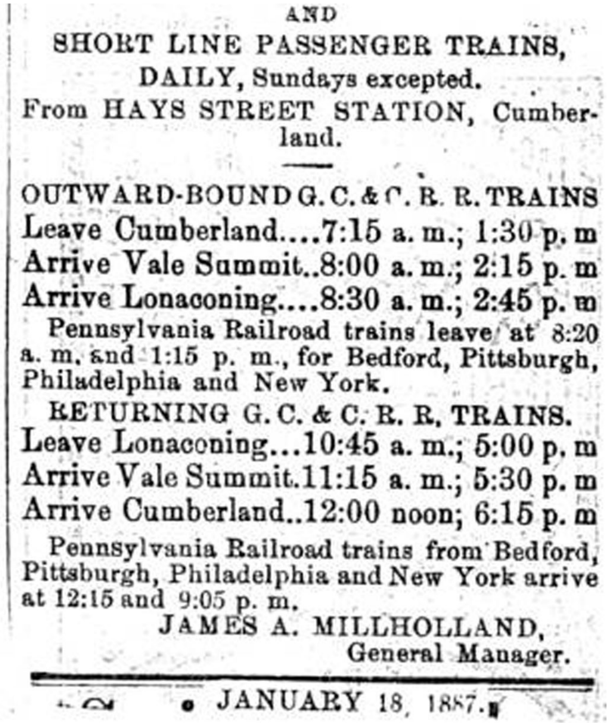
The January 18, 1887 published schedule shows two trains per day from Cumberland to Lonaconing (except Sundays). If you took the 10:45 AM from Lonaconing, you could lunch in Cumberland before catching the 1:15 PM to New York over the Pennsylvania Railroad. This express service would arrive in New York at 7:10 AM the next day. There was checked baggage service on this line.



Motive Power

The GC&C motive power all came from the Pittsburgh Locomotive and Car Works, a Carnegie company. It was located in Allegheny, PA, outside of Pittsburgh. It had a world-wide customer list. It eventually merged with seven other manufacturing company's to form American Locomotive Company, Alco. Three of the Pittsburgh locomotives are known to have survived.

Ten engines were rostered on the GC&C. There were nine engines of the 2-8-0 wheel arrangement, and a 4-6-0 passenger engine. All of the engines went to the Western Maryland, and all were reported scrapped between 1914 and 1917. For rolling stock, the GC&C rostered predominately coal hoppers; two hundred being listed for the year 1884. In addition, the 1884 Poor's lists two box cars, and 10 platform cars. The various ICC valuations list 24 GC&C cabooses for 1911 and 1912, and 20 for the year 1913. The GC&C also had several passenger cars, including an open-sided observation car. The schedule for passenger service in 1887 is shown below



AND

SHORT LINE PASSENGER TRAINS,

DAILY, Sundays excepted.

From HAYS STREET STATION, Cumberland.

OUTWARD-BOUND G. C. & C. R. R. TRAINS
Leave Cumberland....7:15 a. m.; 1:30 p. m
Arrive Vale Summit..8:00 a. m.; 2:15 p. m
Arrive Lonaconing....8:30 a. m.; 2:45 p. m

Pennsylvania Railroad trains leave at 8:20 a. m. and 1:15 p. m., for Bedford, Pittsburgh, Philadelphia and New York.

RETURNING G. C. & C. R. R. TRAINS.
Leave Lonaconing...10:45 a. m.; 5:00 p. m
Arrive Vale Summit.11:15 a. m.; 5:30 p. m
Arrive Cumberland..12:00 noon; 6:15 p. m

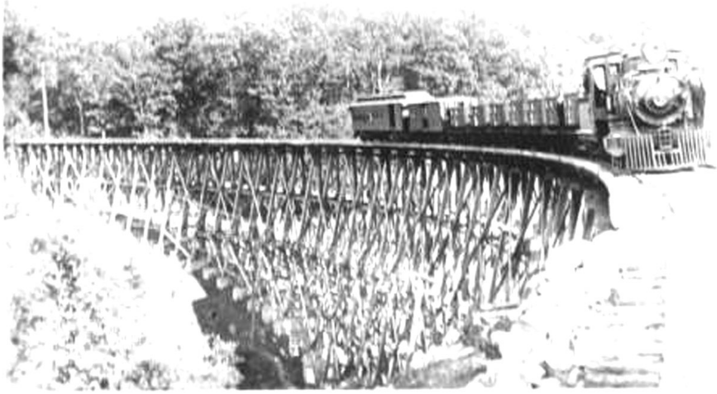
Pennsylvania Railroad trains from Bedford, Pittsburgh, Philadelphia and New York arrive at 12:15 and 9:05 p. m.

JAMES A. MILLHOLLAND,
General Manager.

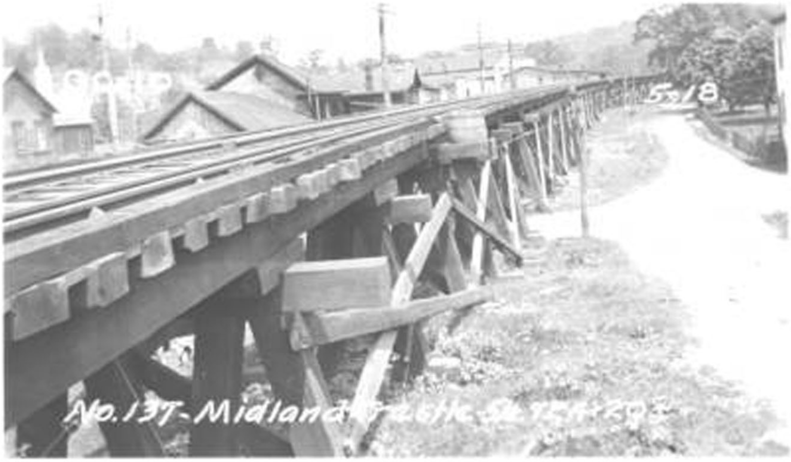
JANUARY 18, 1887.

Trestles

The GC&C was big on trestles. During construction of the line, a single contract for 1.5 million feet of pine trestling lumber was let. Bridge *42* was the Winchester Road Viaduct, which crossed just south of the C&P Bridge. Uphill of the line's two tunnels was Bridge 50, the Percy Hollow Trestle. Past Clarysville was the location of Needham’s Viaduct, also called Bridge 81. Clises Run Viaduct, Bridge 115, at Cabin Run was a major structure. This was of wooden construction first, then later replaced with a steel structure. The stone abutments still exist



Bridge 137, the Midland viaduct, bisected the town. The stone abutment for the northern end can still be seen between Routes 936 and 55, at the northern end of the town.



Beyond Midland, there was a bridge over Douglas Run, the stone ends of which can also still be seen. A turntable was located at Midland Junction.

Two important innovators of the early development and deployment of locomotives in the United States converged at Mount Savage, the 19th Century technology center that developed the first iron rails in the United States. Their contributions were significant, and their legacy is lasting.

Millholland house, Washington Street, Cumberland. Currently the rectory for the Emmanuel Episcopal Church, to its right.

References & Further Reading

Best, G. M. "Thomas H. Paul & Son, Locomotive Builders," Railroad & Locomotive Historical Society Bulletin, No. 141, Autumn, 1979, pp. 19-26.

Gove, Bill *Logging Railroads of the Adirondacks,* 2005, Syracuse University Press, ASIN-B00ZM2OIKO ; pages 111,118, 135.

Hilton, George *American Narrow Gauge Railroads,*1990, Stanford University Press, 1990, ISBN-0804717311.

Lacoste, Kenneth C.; Wall, Robert D., "An Archaeological Study of the Western Maryland Coal Region: The Historic Resources," 1989, Maryland Geological Survey, ASIN-B0006ETKM4.

Lawson, Jr. Thomas *Locomotives of the Southern Iron & Equipment Company,* 2010, ASIN-B01N0BRF11.

Lee, Albin, "The Austin & Northwestern Railroad," Jan./Feb. 1990, Narrow Gauge and Short Line Gazette , pp. 60-63, avail: http://ngslgazette.com/

Lubar, Steven; Hindle, Brooke *Engines of Change, the American Industrial Revolution, 1790-1860,* National Museum of American History, Smithsonian Institution, 1986, ISBN-087474539X.

Mellander, Deane. *Rails to the Big Vein, the Short Lines of Allegany County, Maryland*, January 1981, Potomac Chapter, NRHS, Inc. ASIN-B000GR9LXY

Pangborn, J. G. *The Worlds's Railway,* 1894, Reprinted, 1974, Bramwell House, ASIN: B001AOPM4Y.

Pangborn, J. G. *The Golden Age of the Steam Locomotive,* Winchel Publishing Co., 1894; reprinted, Dover Publications, 2003, ISBN-0-486-42824-9.

Poor, H.V. and H.W., *Poor's Manual of Railroads*, 1884," 1884, 17th Annual Number, pp. 188. (see, https://catalog.hathitrust.org/)

Randolph, B.S. "History of the Maryland Coal Region," Journal of the Alleghenies, Vol. XXIX-1993, pp. 47-62.

Scharf, J. Thomas *History of Western Maryland*, Vol. 2, p.1488-1489. This publication is available in 2 volumes, and in digital form from Amazon Digital Services. Volume 1 is ASIN: B007SNMGIG, and Volume 2 is ASIN: B007SNJ9UO.

Sinclair, Angus *Development Of The Locomotive Engine: A History Of The Growth Of The Locomotive From Its Most Elementary Form, Showing The Gradual Steps Made Toward ... Eminent Engineers And Inventors Who Nursed It*, reprint 2015, ISBN-10-1344755186.

Smith, Gene *Lee & Grant: A Dual Biography,* 1984, McGraw Hill Promontory Press, ISBN 0070584737, pp 358-360.

Stakem, Patrick H., "T.H. Paul & Son, Locomotive Builders in Frostburg, Md.," Jan. 1992, *Automatic Block* (Newsletter of the Western Maryland Chapter, National Railway Historical Society), Cumberland, Md., Vol. 14, No. 1.

Stakem, Patrick H., "Engine #5," 1995, March, 1996, *Automatic Block*, Vol. 18 no. 3.

Stakem, Patrick H. ”The Mt. Savage Locomotive Shops,” National Railway Historical Society Bulletin, Spring/Summer issue, 1997.

Stakem, Patrick H. *Cumberland & Pennsylvania Railroad Revisited,* 2002, Pats Railroad Books, ISBN 0-9725966-0-7.

Strapac, Joseph A. *Cotton Belt Locomotives*, 1999, Indiana University Press, ISBN-0253336015.

Stegmaier, Harry, Jr., et al. *Allegany County - A History*, 1976, McClain Publishing, Parsons, WV. ISBN-0870122576.

Thomas, James W. LL.D. and Williams, Judge T. J. C *History of Allegany County, Maryland*, Baltimore, Regional Publishing Co., 1923, reprinted 1969, Reprinted 2015, ISBN-0806357576 (Vol 2); ISBN-0806357584 (Vol. 1), pp. 626-628.

Ware, Donna M., *Green Glades and Sooty Gob Piles*, 1991, Maryland Historical Trust, ISBN-1878399012 .

Westcott, Kenneth E., & Johnson, Curtiss H. *The Pacific Coast Railway: Central California's Premier Narrow Gauge*, 1998, ISBN-0961546743.

White, John H. *James Millholland and Early Railroad Engineering*, Smithsonian Press, ASIN-B0046NR28K.

Sources

Cumberland Civilian (newspaper), August 19, 1883, re: receivership.May be in the collections of the Geneological Society of Allegany County, holdings in the Library of Allegany College of Maryland, https://www.allegany.edu/library/

Frostburg City Directory, Ort Library, Frostburg University.

Frostburg Mining Journal, (Microfilm, Frostburg University, Ort Library) late 1880, re: 2-6-0 engine for Kansas & Gulf. June 1882, re: engines to Oregon. March 15, 1890 re: 4 hp gas engine. May 24, 1890 re: to Sioux City, Iowa. April 27, 1872.

Holdgreve, Bob, “Window to the Past, A narrow-gauge railroad,” (Toledo, Delphos, and Indianapolis). Avail: http://www.delphos-ohio.com/Holdgreve/narrowgauge_railroad.htm

Journal of the Alleghenies, Publication of the Council of the Alleghenies, www.counciloftheallegheniesorg

Letter from Mr. Claus, General Manager of C&P to Mr. Charles E. Fisher, L&RHS, dated March 23, 1939, Cumberland, MD, concerning Mt. Savage production.

Mount Savage Locomotive Works Catalog, Thomas B. Inness & Co., Broadway, New York, 1883. reprinted in, Stakem, Patrick H. *Cumberland & Pennsylvania Railroad Revisited*, 2011, ISBN-0-9725966-0-7.

Rail Tracks in Allegany County, Maryland, Book 1, 1980, Preservation Society of Allegany County, Md., Cumberland, Md.

Railway & Locomotive Historical Society Bulletin #141, 1979, rlhs.org.

Ramsey, A. D. “The legendary Franklin and Pittsylvania Railroad,” avail: https://archive.org/stream/legendaryfrankli00rams/legendaryfrankli00rams_djvu.txt

Rehor to Fisher, Letter of Feb. 18, 1963, subject: Feb. 10, 1883 Baltimore Manufacturers Records, and reprint of Railroad Gazette of Feb. 16, 1883 (article on T.H. Paul).

Smithsonian Institution, National Museum of American History, Archives, James A. Millholland Collection, 1866-1899.

Southern Iron & Equipment Company Photos and Records, 1903-1960, Smithsonian Institution, 7 boxes, more than 2400 photos. http://americanhistory.si.edu/archives

Western Maryland Chapter, National Railway Historical Society, https://www.facebook.com/pg/WesternMarylandNRHS

G.W. & C. Colton & Co. - Kansas and Gulf Short Line Railroad, Map showing the Kansas & Gulf Short Line R.R. and the Texas & St. Louis R'y with its branches, extensions and connections, 1881, avail: https://www.loc.gov/collections/railroad-maps-1828-to-1900.

https://www.lawrencecountyohio.com/history/places/railroads/

Railroad & Locomotive Historical Society, RLHS.org

National Railway Historical Society, NRHS.com

Journal of the Alleghenies, publication of the Council of the Alleghenies, available at the Frostburg University Ort Library.

wikipedia, various.

T. H. Paul and J. A. Millholland's Patents

Patents may be found online at Google patents, https://patents.google.com

T. H. Paul,

- 470,629; March 8, 1892, “Apparatus for making Illuminating Gas”
- 330,261; November 1885, “Planer-chuck for locomotive links”
- 463,282,1891, “Gas Stove and Radiator.”
- 530,237, 1894, “Gas Engine.” (joint with his son John).

James Allaire Millholland

- 111076, 1871, Improvement in Brick Presses

- 255,653, 1882, Brake for Coal Cars
- 267,561 1882, Automatic Block_signal Mechanism for Railways
- 282,751, 1883, Coal Car

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3. Stakem, Patrick H. *Railroading around Cumberland*, 2012, Arcadia Press, ISBN- 0738553654.
4. Stakem, Patrick H. and Stakem, Patrick E. *CSX Diesel Locomotives in Color*, 2000, Motorbooks International, ISBN-1883089433 .
5. Stakem, Patrick H. and Stakem, Patrick E. *Western Maryland Diesel Locomotives*, 1997, TLC Publishing, ISBN-1883089247.
6. Stakem, Patrick H. *Ross Winans, an Ingenious Mechanic of Baltimore*, 2017, PRRB Publishing, ISBN-1520207298.
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9. Stakem, Patrick H. *Eckhart Mines, The National Road, and the Eckhart Railroad,* 2011, PRRB Publishing, ISBN-1520215878.
10. Stakem, Patrick H., *The Martian Railroad*, 2019, PRRB Publishing, ISBN-9781794488243.